

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Yacobson  
Serial No. to be assigned  
Filed: concurrently herewith  
For: *PHYSICAL PROPERTY*  
*MODIFICATION OF NANOTUBES*

Date: May 23, 2001

Commissioner for Patents  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Sir:

Prior to the examination of the above-referenced application, please enter the following amendment. Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The marked up version of the changes is captioned "**Version With Markings To Show Changes Made**".

**In the Specification:**

On page 1, line 1, please insert the following:

**- Cross-Reference to Related Applications**

The present application is a divisional application of Serial No. 09/186,396 filed November 4, 1998, now allowed, which claims priority to U.S. Provisional Application Serial No. 60/064,539 filed November 5, 1997, the disclosure of which are incorporated by reference herein in their entirety.-

**In the Claims:**

Please enter the following new claims.

24. (New) A carbon nanotube comprising:

a dipole of pentagon-heptagon and heptagon-pentagon dislocation cores located in an opposed spaced-apart relationship along a longitudinal axis of said carbon nanotube;

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a first region comprising a domain of modified lattice structure positioned between said dipole and formed by said dipole propagating throughout the nanotube as a result of stress being applied to said nanotube; and

second and third regions each positioned on opposite sides relative to said first region, the second and third regions comprising lattice structure domains which differ from the domain of modified lattice structure in said first region such that said second and third regions possess a physical property different from the first region.

25. (New) An article of manufacture comprising the nanotube defined in Claim 24.

26. (New) A method of modifying a chemical functionality of a nanotube, said method comprising:

providing a nanotube having a dipole of dislocation cores present therein and a reactive component;

reacting the reactive component and the nanotube such that the chemical functionality of the nanotube is altered.

27. (New) The method according to Claim 26, wherein the reactive component reacts with at least one of the dislocation cores.

Please cancel Claims 1-23 without prejudice or disclaimer thereto.

#### **Remarks**

The present application is a divisional application as described hereinabove. Applicant wishes to pursue newly-drafted Claims 24-27 which

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correspond to claims that were originally subject to a restriction requirement in the parent application.

Applicant requests entry of Claims 24-27 prior to cancellation of Claims 1-23. Please calculate the filing fee subsequent to the entry of Claims 24-27 and the cancellation of Claims 1-23.

Substantive examination on the merits is respectfully requested.

Respectfully submitted,



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Keowanna VC Best

Date of Signature: May 23, 2001

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**Version With Markings To Show Changes Made**

**In the Specification:**

On page 1, line 1, please insert the following:

**- Cross-Reference to Related Applications**

The present application is a divisional application of Serial No. 09/186,396 filed November 4, 1998, now allowed, the disclosure of which is incorporated herein by reference in its entirety. —

**In the Claims:**

Please enter the following new claims.

24. (New) A carbon nanotube comprising:

a dipole of pentagon-heptagon and heptagon-pentagon dislocation cores located in an opposed spaced-apart relationship along a longitudinal axis of said carbon nanotube;

a first region comprising a domain of modified lattice structure positioned between said dipole and formed by said dipole propagating throughout the nanotube as a result of stress being applied to said nanotube; and

second and third regions each positioned on opposite sides relative to said first region, the second and third regions comprising lattice structure domains which differ from the domain of modified lattice structure in said first region such that said second and third regions possess a physical property different from the first region.

25. (New) An article of manufacture comprising the nanotube defined in Claim 24.

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26. (New) A method of modifying a chemical functionality of a nanotube, said method comprising:

providing a nanotube having a dipole of dislocation cores present therein and a reactive component;

reacting the reactive component and the nanotube such that the chemical functionality of the nanotube is altered.

27. (New) The method according to Claim 26, wherein the reactive component reacts with at least one of the dislocation cores.

Please cancel Claims 1-23 without prejudice or disclaimer thereto.

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